What is clamed is:

1. A semiconductor integrated circuit device including a gate electrode structure comprising at least:

a first conductive region and a second conductive region formed on a semiconductor substrate and separated by an isolation region;

a gate insulator formed on said first conductive region and second conductive region across said isolation region;

a second conductive silicon layer, which is deposited on said first conductive region, and a first conductive silicon layer, which is deposited on said second conductive region, and formed on said gate insulator having a boundary on said isolation region;

a first nitride film of refractory metal, which is formed on said first conductive and second conductive silicon layers and separated at a boundary of said first conductive and second conductive silicon layers; and

a first refractory metal film, which is formed on said first nitride film of refractory metal and separated at a boundary of said first conductive and second conductive silicon layers.

2. A semiconductor integrated circuit device according to claim 1, wherein said first conductive and second conductive silicon layers are also separated.

3. A semiconductor integrated circuit device according to claim 1, wherein a second refractory metal or a second nitride film of refractory metal is embedded in said regions separating first nitride film of refractory metal and first refractory metal.

4. A semiconductor integrated circuit device according to claim 1, wherein:

an insulator is embedded in said regions separating first nitride film of refractory metal and first refractory metal, and

a layer which comprises one type of film selected from titanium nitride, zirconium nitride, and hafnium nitride or a composite film therefrom is formed on said embedded insulator and said first refractory metal.

5. A semiconductor integrated circuit device according to claim 1, wherein a first silicide film of refractory metal is formed between said first nitride film of refractory metal and both of said first conductive and second conductive silicon layers.

6. A semiconductor integrated circuit device comprising:

a first conductive region and a second conductive region formed on a semiconductor substrate and separated by an isolation region;

a gate insulator formed on said first conductive region and second conductive region across said isolation region;

a second conductive silicon layer which is deposited on said first conductive region, and a first conductive silicon layer which is deposited on said second conductive region, and formed on said gate insulator having a boundary on said isolation region; and

carbon which is included in said first nitride film of refractory metal and first refractory metal film on a boundary between said first conductive and second conductive silicon layers in a gate electrode structure consisting of a first nitride film of refractory formed on said first conductive and second conductive silicon layers and a first refractory metal film formed on said first nitride film of refractory metal.

7. A semiconductor integrated circuit device according to claim 6, wherein, instead of carbon, nitrogen and oxygen elements are included in said first nitride film of refractory metal and first refractory metal film on a boundary between said first conductive and second conductive silicon layers.

8. A semiconductor integrated circuit device according to claim 6, wherein a first silicide film of refractory metal is formed between said nitride film of refractory material and said first conductive and second conductive silicon layers.

9. A semiconductor integrated circuit device according to claim 1, wherein a non-doped silicon layer or germanium-doped silicon layer is formed between said nitride film of refractory material and said first conductive and second conductive silicon layers.

10. A semiconductor integrated circuit device according to claim 6, wherein a non-doped silicon layer or germanium-doped silicon layer is formed between said first refractory metal silicide and said first conductive and second conductive silicon layers.

11. A method of manufacturing a semiconductor integrated circuit device comprising at least the steps of:

(1) forming a first conductive region and a second conductive region separated by an isolation region on said semiconductor substrate;

(2) forming a gate insulator on said first conductive region and second conductive region across said isolation region;

(3) forming a silicon layer on said gate insulator, wherein a second conductive silicon layer is formed on said first conductive region and a first conductive silicon layer is formed on a said second conductive region, where a boundary of both layers connects each other on said isolation region;

(4) forming a first nitride film of refractory metal on said first conductive and second conductive silicon layers;

(5) forming a first refractory metal on said first nitride film of refractory metal;

(6) forming a silicon nitride film on said first refractory metal film, and subsequently opening a part of said first conductive and second conductive silicon layers on the boundary by patterning said silicon nitride film; and

(7) removing a part of said first nitride film of refractory metal and refractory metal film on the boundary of said first conductive and second conductive silicon layers using said patterned silicon nitride film as a mask.

12. A method of manufacturing a semiconductor integrated circuit device according to claim 11, further including the steps of:

forming a first silicide film of refractory metal on said first conductive and second conductive silicon layer between said steps (3) and (4); and

in step (7), using said patterned silicon nitride film, removing said first silicide film of refractory metal located on part of a boundary of said first conductive and second conductive silicon layers.

13. A method of manufacturing a semiconductor integrated circuit device according to claim 11, further including the step of:

embedding a second refractory metal or a second nitride film of refractory metal in the removed part of said first nitride film of refractory metal and first refractory metal, or said first silicide film of refractory metal.

14. A method of manufacturing a semiconductor integrated circuit device according to claim 11, further including the following steps:

embedding an insulator in said removed region of said first nitride film of refractory metal and first refractory film, or first silicide film of refractory metal film; and

forming a layer which comprises one type of film selected from titanium nitride, zirconium nitride, and hafnium nitride or a composite film therefrom on said embedded insulator and said first refractory metal film.

15. A method of manufacturing a semiconductor integrated circuit device, wherein a manufacturing method of a gate electrode formed on a semiconductor substrate comprises at least the steps of:

(1) forming a first conductive region and a second conductive region separated by an isolation region on said semiconductor substrate;

(2) forming a gate insulator on said first conductive region and second conductive region across said isolation region;

(3) forming a silicon layer on said gate insulator, wherein a second conductive silicon layer is formed on said first conductive region and a first conductive silicon layer is formed on said second conductive region, where a boundary of both layers connects each other on said isolation region;

(4) forming a non-doped silicon layer or germanium-doped silicon layer on said first conductive and second conductive silicon layers;

(5) forming a first nitride film of refractory metal on said non-doped silicon layer or germanium-doped silicon layer;

(6) forming a first refractory metal film on said first nitride film of refractory metal; and

(7) forming a silicon nitride film on said first refractory metal film.

16. A method of manufacturing a semiconductor integrated circuit device according to claim 15, wherein a first conductive impurity and second conductive impurity are injected in the parts of said non-doped silicon layer or germanium-doped silicon layer deposited on said first conductive silicon layer and second conductive silicon layer,

respectively, through said first refractory metal film after step (6).

17. A method of manufacturing a semiconductor integrated circuit device, wherein a manufacturing method of a gate electrode formed on a semiconductor substrate comprising at least the steps of:

(1) forming a first conductive region and a second conductive region separated by an isolation region on said semiconductor substrate;

(2) forming a gate insulator on said first conductive region and second conductive region across said isolation region;

(3) forming a silicon layer on said gate insulator, wherein a second conductive silicon layer is formed on said first conductive region and a first conductive silicon layer is formed on said second conductive region, where a boundary of both layers connects each other on said isolation region;

(4) forming a first nitride film of refractory metal on said first conductive and second conductive silicon layers;

(5) forming a refractory metal film on said a first nitride film of refractory metal;

(6) forming a silicon nitride film on said first refractory metal film, and subsequently opening a part of said first conductive and second conductive silicon layers on the

boundary by patterning said silicon nitride film; and

(7) using said patterned silicon nitride film as a mask, injecting carbon, nitrogen, or oxygen into the upper part of said first nitride film of refractory metal and the refractory metal film at the boundary between said first conductive and second conductive silicon layers.

18. A method of manufacturing a semiconductor integrated circuit device according to claim 11, wherein formation of said silicon nitride film comprises the steps of:

depositing a first silicon nitride film with 5 nm to 50 nm thickness using a chemical vapor deposition method at 700°C to 750°C; and

depositing a second silicon nitride film on said first silicon nitride film using a plasma chemical vapor deposition method at 400°C to 650°C.

19. A method of manufacturing a semiconductor integrated circuit device according to claim 11, wherein formation of said silicon nitride film comprises the steps of:

depositing a first silicon oxide film with 5 nm to 50 nm thickness using a chemical vapor deposition method at 400°C to 650°C; and

depositing a second silicon nitride film on said first silicon oxide film using a plasma chemical vapor deposition method at 400°C to 650°C.

20. A method of manufacturing a semiconductor integrated circuit device according to claim 17, wherein a second refractory metal film or second nitride film of refractory metal is formed on the region of said first refractory metal film where carbon, nitrogen, or oxygen atoms are injected.

21. A semiconductor integrated circuit device according to claim 2, wherein a second refractory metal or a second nitride film of refractory metal is embedded in said isolated region of the first nitride film of refractory metal and the first refractory metal.

22. A semiconductor integrated circuit device according to claim 2, wherein:

an insulator is embedded in said isolated region of said first nitride film of refractory metal and first refractory film, and

a layer which comprises one type of film selected from titanium nitride, zirconium nitride, and hafnium nitride or a composite film therefrom is formed on said embedded insulator and said first refractory metal.

23. A semiconductor integrated circuit device according to claim 2, wherein a first silicide film of refractory metal is

formed between said nitride film of refractory metal and said first and second conductive silicon layers.

24. A semiconductor integrated circuit device according to claim 7, wherein a first silicide film of refractory metal is formed between said nitride film of refractory metal and said first and second conductive silicon layers.

25. A semiconductor integrated circuit device according to claim 6, wherein a non-doped silicon layer or germanium-doped silicon layer is formed between said nitride film of refractory metal and said first and second conductive silicon layers.

26. A semiconductor integrated circuit device according to claim 8, wherein a non-doped silicon layer or germanium-doped silicon layer is formed between said nitride film of refractory metal and said first and second conductive silicon layers.

27. A method of manufacturing a semiconductor integrated circuit device according to claim 12, further including the step of:

embedding a second refractory metal or a second nitride film of refractory metal in the removed part of said first nitride film of refractory metal and first refractory metal, or said first silicide film of refractory metal.

28. A method of manufacturing a semiconductor integrated circuit device according to claim 12, further including the following steps of:

embedding an insulator in said removed region of said first nitride film of refractory metal and first refractory film, or first silicide film of refractory metal; and

forming a layer which comprises one type of film selected from titanium nitride, zirconium nitride, and hafnium nitride or a composite film therefrom on said embedded insulator and said first refractory metal film.

29. A method of manufacturing a semiconductor integrated circuit device according to claim 15, wherein formation of said silicon nitride film comprises the steps of:

depositing a first silicon nitride film with 5 nm to 50 nm thickness using a chemical vapor deposition method at 700°C to 750°C; and

depositing a second silicon nitride film on said first silicon nitride film using a plasma chemical vapor deposition method at 400°C to 650°C.

30. A method of manufacturing a semiconductor integrated circuit device according to claim 17, wherein formation of said silicon nitride film comprises the steps of:

depositing a first silicon nitride film with 5 nm to 50 nm thickness using a chemical vapor deposition method at 700°C

to 750°C; and

depositing a second silicon nitride film on said first silicon nitride film using a plasma chemical vapor deposition method at 400°C to 650°C.

31. A method of manufacturing a semiconductor integrated circuit device according to claim 15, wherein formation of said silicon nitride film comprises the steps of:

depositing a first silicon nitride film with 5 nm to 50 nm thickness using a chemical vapor deposition method at 400°C to 650°C; and

depositing a second silicon nitride film on said first silicon nitride film using a plasma chemical vapor deposition method at 400°C to 650°C.

32. A method of manufacturing a semiconductor integrated circuit device according to claim 17, wherein formation of said silicon nitride film comprises the steps of:

depositing a first silicon nitride film with 5 nm to 50 nm thickness using a chemical vapor deposition method at 400°C to 650°C; and

depositing a second silicon nitride film on said first silicon nitride film using a plasma chemical vapor deposition method at 400°C to 650°C.